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| 10/623,807 | 07/22/2003 | Kotoyoshi Murakami | 740819-1024 | 5277 |

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NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

EXAMINER

OMGBA, ESSAMA

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| ART UNIT | PAPER NUMBER |
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3726

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,807

Applicant(s)

MURAKAMI, KOTOYOSHI

Examiner

Essama Omgba

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/22/03, 1/30/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 4, line 23, --is-- should be inserted before "being"; on page 11, lines 14-15, the phrase "Especially when a junction tool that a small and large diameter portions are provided in its first too" is not clear.

Appropriate correction is required.

Claim Objections

2. Claims 1-16 are objected to because of the following informalities: in claim 1, lines 4, 14 and 17, claim 6, lines 4, 16 and 20, claim 9, line 4 and claim 14, line 4, "surface" should read --surfaces--; also in claim 1, line 14 and claim 6, line 16, "the" second occurrence should be deleted; still in claim 1, line 17 and claim 6, line 20, "so as to agitate" should read --thereby agitating--. It is also suggested that Applicant changes the term "depression" with --recess-- throughout the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "the superimposed surface" in line 4 and "the distal end surface" in lines 5 and 6. There is insufficient antecedent basis for these limitations in the claim. Also in lines 14 and 15, the phrase "the rotation of the junction tool by the pin of the first tool and the depression of the second tool" is not clear.

In claims 2, 6, 10 and 14, the structural relationship between the "concave groove" and the "pin" is not well defined.

The language of claims 4, 5, 7, 8, 12, 13, 15 and 16 is confusing. Applicant should amend the claims to clearly define the invention.

Claim 6 recites the limitation "the superimposed surface" in line 4, "the distal end surface" in lines 5 and 6. There is insufficient antecedent basis for these limitations in the claim.

Claim 9 recites the limitation "the superimposed surface" in line 4, "its distal end surface" in lines 6, 8 and 9. There is insufficient antecedent basis for these limitations in the claim.

Claim 14 recites the limitation "the superimposed surface" in line 4, "its distal end surface" in lines 6, 9 and 10. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 9 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Voelkner et al. (US Patent 6,473,957).

With regards to claim 9, Voelkner et al. discloses a junction tool for joining a workpiece made of a plurality of plate materials 2,3 superimposed in their thickness directions at points, the tool comprising first and second tools that are placed on a junction axis substantially perpendicular to superimposed surfaces of the workpiece so as to nip the workpiece, with the first tool rotatable about the junction axis, the first tool provided with a pin 1a protruding from a distal end surface along the junction axis and the second tool provided with a depression (the recess formed by members 4 and 5) along the junction axis, see column 2, lines 5-16, column 3, lines 18-26 and figures 2 and 4.

For claim 12, the end surface of member 5 has a larger diameter than the diameter of pin 1a.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Voelkner et al. in view of Heideman et al. (US Patent 6,053,391).

Voelkner et al. discloses a junction tool as shown above except for an annular groove surrounding the pin. However it is known to provide protruding pins of junction tools with a surrounding groove as attested by Heideman et al., see column 4, lines 24-25, column 6, lines 1-9 and figures 2 and 3. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a concave groove surrounding the pin of Voelkner et al.'s tool, in light of the teachings of Heideman et al., in order to better confine the moved metal.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Voelkner et al. in view of Schleicher (US Patent 5,408,735).

Voelkner et al. discloses a junction tool as shown above except for a convex portion surrounding the recess. However it is known to provide recesses with convex surrounding portions on junction tools as attested by Schleicher, see column 20, lines 45-59 and column 24, lines 35-48 and figures 113, 114. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have

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substituted the anvil die of Voelkner et al. with the one taught by Schleicher, in order to enable better inward radial penetration of the material and avoid sheet tearing thereby enhancing the mechanical lock between the sheets.

10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voelkner et al. in view of Heideman et al. and Schleicher.

With regards to claim 14, Voelkner et al. discloses a junction tool for joining a workpiece made of a plurality of plate materials 2,3 superimposed in their thickness directions at points, the tool comprising first and second tools that are placed on a junction axis substantially perpendicular to superimposed surfaces of the workpiece so as to nip the workpiece, with the first tool rotatable about the junction axis, the first tool provided with a pin 1a protruding from a distal end surface along the junction axis and the second tool provided with a depression (the recess formed by members 4 and 5) along the junction axis, see column 2, lines 5-16, column 3, lines 18-26 and figures 2 and 4. Voelkner et al. does not disclose an annular concave groove surrounding the pin. However it is known to provide protruding pins of junction tools with a surrounding groove as attested by Heideman et al., see column 4, lines 24-25, column 6, lines 1-9 and figures 2 and 3. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a concave groove surrounding the pin of Voelkner et al.'s tool, in light of the teachings of Heideman et al., in order to better confine the moved metal. Voelkner et al. does not also disclose a convex portion surrounding the recess. However it is known to provide recesses with convex surrounding portions on junction tools as attested by Schleicher, see column 20, lines

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45-59 and figures 113, 114. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have substituted the anvil die of Voelkner et al. with the one taught by Schleicher, in order to enable better inward radial penetration of the material and avoid sheet tearing thereby enhancing the mechanical lock between the sheets.

For claim 15, the end surface of member 5 has a larger diameter than the diameter of pin 1a.

Allowable Subject Matter

11. Claims 1-8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Essama Omgba whose telephone number is (571) 272-4532. The examiner can normally be reached on M-F (10-7:30) First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Essama Omgba
Primary Examiner
Art Unit 3726

eo
December 10, 2004